

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT

In re application of: )  
Stephen Donovan )  
Serial No. Not yet assigned )  
Dated: Herewith )  
For: CLOSTRIDIAL TOXIN DERIVATIVES )  
AND METHODS FOR TREATING )  
PAIN )  
)

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ENTRY OF SEQUENCE LISTING

Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Attached is the "Sequence Listing" which complies with the requirements of 37 CFR 1.821-1.825, for the above-identified application, in computer readable form (CRF) and paper form. The contents of the paper and computer readable copies are the same and include no new matter.

Respectfully submitted,



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## SEQUENCE LISTING

<110> Donovan, Stephen

<120> Clostridial Toxin Derivatives and Methods for Treating Pain

<130> D-2875DIV

<150> US 09/489,667

<151> 2000-01-19

<160> 18

<170> PatentIn version 3.1

<210> 1

<211> 11

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: This is a substance P and is very well known in the art.

<220>

<221> MISC\_FEATURE

<222> (11)..(11)

<223> Xaa at position 11 is Methionine Amide

<400> 1

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Xaa  
1 5 10

<210> 2

<211> 12

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: Precursor to substance P, which is very well known in the art.

<400> 2

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly  
1 5 10

<210> 3  
<211> 13  
<212> PRT  
<213> Unknown

<220>

<223> Description of Unknown Organism: This is a precursor to  
substanc  
e P and is very well known in the art.

<400> 3

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys  
1 5 10

<210> 4  
<211> 14  
<212> PRT  
<213> Unknown

<220>

<223> Description of Unknown Organism: This is a precursor to  
substanc  
e P and is very well known in the art.

<400> 4

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg  
1 5 10

<210> 5  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is a carboxy-e  
ster synt  
hetic precursor to substance P.

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa at position 12 is Glycine Methyl Ester

<400> 5

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Xaa  
1 5 10

<210> 6  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: This is a carboxy-ester syntetic precursor to substance P.

<220>  
<221> MISC\_FEATURE  
<222> (13)..(13)  
<223> Xaa at position 13 is Lysine Methyl Ester

<400> 6

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Xaa  
1 5 10

<210> 7  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: This is a carboxy-ester syntetic precursor to substance P.

<220>  
<221> MISC\_FEATURE  
<222> (14)..(14)  
<223> Xaa at position 14 is Arginine Methyl Ester

<400> 7

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Xaa  
1 5 10

<210> 8  
<211> 12  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: This is a carboxy-ester syntetic precursor to substance P.

&lt;220&gt;

&lt;221&gt; MISC\_FEATURE

&lt;222&gt; (12)..(12)

&lt;223&gt; Xaa at position 12 is Glycine Ethyl Ester

&lt;400&gt; 8

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Xaa  
1 5 10

&lt;210&gt; 9

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: This is a carboxy-ester syntetic precursor to substance P.

&lt;220&gt;

&lt;221&gt; MISC\_FEATURE

&lt;222&gt; (13)..(13)

&lt;223&gt; Xaa at position 13 is Lysine Ethyl Ester

&lt;400&gt; 9

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Xaa  
1 5 10

&lt;210&gt; 10

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: This is a carboxy-ester syntetic precursor to substance P.

&lt;220&gt;

&lt;221&gt; MISC\_FEATURE

<222> (14)..(14)

<223> Xaa at position 14 is Arginine Ethyl Ester

<400> 10

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Xaa  
1 5 10

<210> 11

<211> 4

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: This is a naturally occurring am

ino thermal peptide fragment derived from substance P.

<400> 11

Arg Pro Lys Pro  
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<210> 12

<211> 7

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: This is a naturally occurring am

ino acid thermal peptide fragment derived from substance P.

<400> 12

Arg Pro Lys Pro Gln Gln Phe  
1 5

<210> 13

<211> 9

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: This is a naturally occurring am

ino thermal peptide fragment derived from substance P.

<400> 13

Arg Pro Lys Pro Gln Gln Phe Phe Gly  
1 5

<210> 14

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is an analog o  
f substan  
ce P.

<220>

<221> MISC\_FEATURE

<222> (2)..(11)

<223> Xaa at position 2 is D-form of Proline, Xaa at position  
7 is D-fo  
rm of Phenylalanine, Xaa at position 9 is D-form of Tryp  
tophan, X  
aa at position 11 Methionine Amide

<400> 14

Arg Xaa Lys Pro Gln Gln Xaa Phe Xaa Leu Xaa  
1 5 10

<210> 15

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is an analog o  
f substan  
ce P.

<220>

<221> MISC\_FEATURE

<222> (2)..(9)

<223> Xaa at positon 2 is D-form of Proline, Xaa at position 7  
is D-for  
m of Phenylalanine, Xaa at position 9 is D-form of Trypt  
ophan

<400> 15

Arg Xaa Lys Pro Gln Gln Xaa Phe Xaa Leu Met Gly  
1 5 10

<210> 16

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is an analog o  
f substan  
ce P.

<220>

<221> MISC\_FEATURE

<222> (2)..(11)

<223> Xaa at position 2 is D-form of Proline, Xaa at position  
7 is D-fo  
rm of Tryptophan, Xaa at position 9 is D-form of Tryptop  
han, Xaa  
at position 11 is Methionine Amide

<400> 16

Arg Xaa Lys Pro Gln Gln Xaa Phe Xaa Leu Xaa  
1 5 10

<210> 17

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is an analog o  
f substan  
ce P.

<220>

<221> MISC\_FEATURE

<222> (2)..(9)

<223> Xaa at position 2 is D-form of Proline, Xaa at position  
7 is D-fo  
rm of Tryptophan, Xaa at position 9 is D-form of Tryptop  
han

<400> 17

Arg Xaa Lys Pro Gln Gln Xaa Phe Xaa Leu Met Gly  
1 5 10

<210> 18  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: This is an analog o  
f substan  
ce P.

<220>  
<221> MISC\_FEATURE  
<222> (11)..(11)  
<223> Xaa at position 11 is Methionine Amide

<400> 18

Arg Pro Cys Pro Gln Cys Phe Tyr Gly Pro Xaa  
1 5 10